

19. With neat diagram, explain the working of a push-pull amplifier and calculate its efficiency.
20. Write the general characteristics of negative feedback amplifier.

NOVEMBER/DECEMBER 2025

23UEL11 — BASIC ELECTRONICS

Time : Three hours

Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.



1. State Kirchhoffs law.
2. Define mesh current.
3. Define RMS value and average value of a sinusoidal wave.
4. What is the significance of the Q-factor in a resonant circuit?
5. Write the characteristics of a PN junction diode.
6. Define ripple factor.
7. List two differences between CB and CE configurations.
8. What is an emitter follower?

9. Write any two applications of feedback amplifier.
10. What is gain stability?

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Discuss the super position theorem and draw the circuit diagram.

Or

- (b) Explain the Norton's theorem with example.

12. (a) Derive an expression for power in an AC circuit with resistance only.

Or

- (b) Draw the circuit diagram for parallel resonant circuit and explain its function.

13. (a) Explain working principle of a half wave rectifier with circuit diagram.

Or

- (b) What are the differences between clipper and Clamper circuits?

14. (a) Explain the frequency response of a single stage RC coupled amplifier.

Or

- (b) Write short note on Class A and Class B power amplifiers.

15. (a) Briefly explain the distortion and bandwidth.

Or

- (b) Discuss the analysis of voltage and current in feedback amplifier circuit.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the Thevenin to Norton conversion and draw the circuit diagram.

17. Derive the expression for the impedance of a series LCR circuit. Also explain the condition for resonance.

18. Draw the circuit diagram of full wave bridge rectifier, explain its working principle and derive its efficiency.